



HOEGANAES CORPORATION

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SUBSIDIARY OF INTERLAK, INC.

DATA SHEET

POWDER METALLURGY GRADES

In 1953, Hoeganaes started producing sponge iron powders in Riverton, New Jersey to satisfy the growing U.S.A. metal powders market, formerly supplied largely from Hoganas, Sweden. Soon, atomized iron, low alloy and high alloy steel powder plants were added to meet the demand for more specialized powders. Hoeganaes intends to continue as the leading supplier of ferrous powders by introducing new powders as developed and when needed by the industries we serve.

Brief descriptions and typical properties of the Hoeganaes standard powder metallurgy grades are given here. Other types of powder are obtainable for powder metallurgy and a wide variety of uses in other industries.

SPONGE IRON POWDERS

Sponge iron is produced by direct reduction of magnetite iron ore. Controlled grinding and annealing of the sponge iron assures optimum purity and particle size distribution required for production of low and medium density P/M parts. Additions of small amounts of graphite with or without copper or nickel are used to increase sintered strength.

Ancor® MH-100 is recommended for a majority of P/M parts where low and medium densities will meet mechanical property requirements. This is the most widely used iron powder today.

Ancormet® 101 has a combination of good compressibility, high green strength, fast carbon pick up during sintering and small dimensional change. Up to 6.7 g/cm³, its sintered strength is superior to the strength of high compressibility powders of equal densities.

Ancoloy® contains 1.75% nickel, .6% molybdenum and 1.55% copper for medium density parts requiring heat treatment. Its small size change during sintering and heat treatment assures excellent reproducibility of dimensions.

Ancor MH-1024M with .5%, 1% or 2% sulfur is recommended for parts requiring machining after sintering. Its properties are otherwise quite similar to Ancor MH-100.

ATOMIZED STEEL POWDERS

Ancorsteel® powders are designed for parts requiring densities over 6.7 g/cm³. They are atomized from molten metal with each particle a homogeneous composition. Freedom from deleterious impurities and the irregular but solid particle shape permit pressing to high densities by conventional P/M techniques or to full density by P/M hot forming techniques.

Ancorsteel 1000 is a high compressibility powder low in carbon and oxygen content. Excellent physical properties are obtained economically with small additions of alloys such as graphite, copper or nickel.

Ancorsteel 1015 is a carbon containing steel powder. The prealloyed carbon permits fast sintering. It is often used in copper-carbon mixes because of its low growth in sintering.

Ancorsteel 2000 is an economical .45% Ni, .60% Mo, .30% Mn alloy for production of parts requiring heat treatment. The homogeneity of the alloy content results in substantially greater hardenability than is attainable with admixed elemental alloying powders.

Ancorsteel 4600V is a 1.8% Ni, .50% Mo, .25% Mn alloy especially designed for P/M parts which require higher hardenability than provided for with Ancorsteel 2000. The higher Ni content also provides higher impact strength.

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